

New Combinations in *Codariocalyx* (Leguminosae)

Hiroyoshi OHASHI

Botanical Garden, Tohoku University, Sendai, 980-0862 JAPAN
E-mail address: ohashi@mail.tains.tohoku.ac.jp

(Received on April 20, 2004)

Two new combinations are proposed under *Codariocalyx microphyllum* (Thunb.) H. Ohashi, var. *macrocarpus* (Baker) H. Ohashi and var. *microphyllum* f. *glaber* (H. Ohashi & T. T. Chen) H. Ohashi.

Key words: *Codariocalyx*, *Desmodium*, Leguminosae, new combination.

Desmodium microphyllum (Thunb.) DC. is the only species having arillate seeds in the genus (Ohashi 1973). The species was, classified in sect. *Sagotia* in subgenus *Sagotia* together with species lacking an aril. Pedley (1999) created a new series in the section, ser. *Arillata* Pedley, for *D. microphyllum* based on its arillate seeds. *Desmodium microphyllum* was considered to be closely related to *D. heterophyllum* (Willd.) DC. and *D. auricomum* Grah. ex Benth. based on the morphological similarity of the small leaflets, lax flowered racemes (not pseudoracemes), slender pedicels, small flowers and dehiscent legumes (Ohashi 1973, 1994).

In a study on *Desmodium* and related genera in Malesia, I compared *D. microphyllum* with *Codariocalyx*, because they have arillate seeds (Ohashi 2004). *Codariocalyx* comprises two species, *C. gyroides* (DC.) Hassk. and *C. motorius* (Houtt.) H. Ohashi. These species and *D. microphyllum* share the following characters: arillate seeds which are shown in Fig. 8 of *Codariocalyx* and 5 in Fig. 67 of *D. microphyllum* in Ohashi (1973), 1- and 3-foliolate leaves, keel-petal with a small membranous lamellate appendage near the base of lamina on the adaxial surface (shown in Fig. 7k of *Codariocalyx*

and 12 in Fig. 55 of *D. microphyllum* in Ohashi (1973)), standard broadly obovate, orbicular or transversely broadly elliptic, rounded or emarginate and tapering to the claw, legumes dehiscent along the abaxial suture, and the minutely wrinkled surface of the pollen grains. On the other hand, *Codariocalyx* and *D. microphyllum* differ in several remarkable characters. In *Codariocalyx* the inflorescences are pseudoracemose, i. e., flowers 2 or 3 per node, and densely flowered, while in *D. microphyllum* those are racemose, i. e., flowers one per node, and lax, usually 3–10-flowered. The calyx is 5-lobed with the lateral and lowest lobes are narrowly triangular and the upper lobes connate below one-third at the base in *D. microphyllum*, while the calyx is 4-lobed with the lateral and lowest lobes shallowly triangular and the upper lobes connate almost to the apex in *Codariocalyx*.

Surveying the genera of tribe Desmodieae based on morphology (Ohashi 2004, in prep.) and the chloroplast genome (Kajita et al. 1996, Kajita et al. unpubl. in Nemoto and Ohashi 2003), I revised the circumscription of *Codariocalyx* broader than my previous one to include *Desmodium microphyllum* in the genus. *Codariocalyx* is, therefore, char-

acterized by arillate seeds, dehiscent legumes, keel-petals with a lamellate appendage and wrinkled pollen sculpture.

Desmodium microphyllum is distributed widely in tropical Asia and Australia. It shows a wide range of variation in habit and morphology, but only two infraspecific taxa are recognized (Ohashi 1984). The following new combinations for the two infraspecific taxa are necessary:

Codariocalyx microphyllus (Thunb.) H. Ohashi in J. Jpn. Bot. **79**: 126 (2004).

Hedysarum microphyllum Thunb. in Murray, Syst. Veg. ed. 14, 675 (1784) & Fl. Jap.: 284 (1784) [Type: Japonia. Thunberg (UPS)].

Desmodium parvifolium DC. in Ann. Sci. Nat. (Paris) **4**: 100 (Jan. 1825) [Type: Napaulia. Wallich (G-DC., holo.)]; Baker in Fl. Brit. Ind. **2**: 174 (1876).

Desmodium microphyllum (Thunb.) DC., Prodr. **2**: 337 (1825); H. Ohashi in Ginkgoana **1**: 241 (1973) & in J. Jpn. Bot. **59**: 45 (1984).

Further synonyms and bibliography are provided in Ohashi (1973, 2004) and Pedley (1999) under *Desmodium microphyllum*.

Distr.: Sri Lanka, India, Myanmar, Thailand, Indo-China, Malesia, China, Taiwan, Japan, and Australia (Queensland and Arnhem Land).

var. **microphyllus**

f. **glaber** (H. Ohashi & T. T. Chen) H. Ohashi, comb. nov.

Desmodium microphyllum (Thunb.) DC. f. *glabrum* H. Ohashi & T. T. Chen in J. Jpn. Bot. **59**: 45 (1984) [Type: Nepal. Arun Valley: Tateishi 8038 (TUS holo.)].

Distr. (f. *glaber*): Eastern Nepal.

var. **macrocarpus** (Baker) H. Ohashi, comb. nov.

D. parvifolium DC. var. *macrocarpum* Baker in Hook. f., Fl. Brit. Ind. **2**: 174 (1876) [Lectotype: India. Assam, Khasia. Griffith 355 K. selected by Ohashi (1984). photo. TUS].

D. microphyllum var. *macrocarpum* Schindl. in Repert. Spec. Nov. Regni Veg. **21**: 4 (1925) [Syntypes: India. Khasia, etc. Gammie 366, Griffith Kew Distr. no. 1627, Clarke 5199, etc. E. Nepal. Hook. f. et Thomson s. n.]; H. Ohashi in Ginkgoana **1**: 241 (1973).

D. microphyllum var. *macrocarpum* (Baker) H. Ohashi in J. Jpn. Bot. **59**: 45 (1984).

Distr.: Eastern Nepal and Khasi Hill in Assam, eastern India.

References

- Kajita T., Ohashi H., Nemoto T., Bailey C. D., Doyle J. L. and Doyle J. J. 1996. Polyphyly of the legume tribe Desmodieae: evidence from the chloroplast genome. *Amer. J. Bot.* **83**: S165.
- Nemoto T. and Ohashi H. 2003. Diversity and evolution of anatomical structure of lomentis in tribe Desmodieae (Papilionoideae). Klitgaard B. B. and Bruneau A. (eds.), *Advances in Legume Systematics, part 10, Higher Level Systematics*. pp. 395–412. Royal Botanic Gardens, Kew.
- Ohashi H. 1973. The Asiatic species of *Desmodium* and its allied genera (Leguminosae). Ginkgoana No. 1. Academia Scientific Book Co., Tokyo.
- 1994. The taxonomic position of *Desmodium auricomum* Benth. (Leguminosae-Papilionoideae) and its new variety. *J. Jpn. Bot.* **69**: 24–27.
- 2004. Taxonomy and distribution of *Desmodium* and related genera (Leguminosae) in Malesia (I). *J. Jpn. Bot.* **79**: 118–156.
- in prep. Tribe Desmodieae. In: Lewis G. P., Schrire B., Mackinder B. and Lock M. (eds.), *Legumes of the World*. Royal Botanic Gardens, Kew.
- Pedley L. 1999. *Desmodium* Desv. (Fabaceae) and related genera in Australia: a taxonomic revision. *Austrobaileya* **5** (2): 209–261.

大橋広好：マメ科マイハギ属の新組合せ

マイハギ属の特徴の一つに仮種皮をもつことが知られている (Ohashi 1973; Ginkgoana 1: 26および42 fig. 8). ヒメノハギはシバハギ属の中で仮種皮をもつ唯一の種であった。それにも拘わらず、本種は総状花序 (偽総状花序ではなく) に小形の花をつけ、かつ萼の形がよく似ていることで、カワリバマキエハギ *Desmodium heterophyllum* (Willd.) DC. や東南アジアの *Desmodium auricomum* Grah. ex Benth. に近縁と考えられていたため、シバハギ属に置かれていた。しかし、ヒメノハギは仮種皮をもつ特徴によって同じ節の中で ser. *Arillata* Pedley (1999) としてこれらの種から区別されることになった。Flora Malesiana 地域のシバハギ属とその近縁属について研究した際に、ヒメノハギの形質を再検討しシバハギ属およびマイハ

ギ属と比較してみると、ヒメノハギは仮種皮をもつこと以外にも次の特徴、すなわち葉は1小葉と3小葉とをもつこと、旗弁は幅が広くて短い爪をつけ、龍骨弁に小形の突起があること、豆果は下部縫合線に沿って列開すること、花粉外表層 *tectum* の表面に細かいしわがあることによって、マイハギ属に一致することが明らかとなった。ヒメノハギをマイハギ属に移した結果、ヒマラヤ東部とアッサム Khasi 山地に知られていたヒメノハギの1変種 var. *macrocarpum* (Baker) H. Ohashi とヒマラヤ東部の1品種 f. *glabrum* H. Ohashi & T. T. Chen の学名についても組み替えが必要となり、本論文でそれらの新組合せを行った。

(東北大学附属植物園津田記念館)